

REMARKS

Claims 1-33 have been cancelled.

Claims 40 and 56 have been amended. Thus, claims 34 - 60 are pending in the current application. No new matter has been added. In view of the following remarks, it is respectfully submitted that these claims are in condition for allowance.

Claims 34 - 52 and 54 - 60 stand rejected under 35 U.S.C. 103(a) as unpatentable over Burkinshaw et al. (U.S. Patent No. 6,551,321) in view of Brumback et al. (U.S. Patent No. 6,120,504) and Hover et al. (U.S. Patent No. 6,296,645).

Claim 34 recites an intramedullary nail comprising “a nail body having a longitudinal axis, a proximal end configured and dimensioned for coupling to an insertion device, and a distal end having a tip configured and dimensioned for insertion into the intramedullary canal of a long bone” in combination with “at least three transverse holes extending through the distal end of the nail body, each transverse hole defining a hole axis, and all three transverse holes grouped at the distal end within a distance x measured from the tip of the nail body to the axis of the transverse hole furthest from the tip, wherein a projection of the three hole axes of the at least three transverse holes in a plane orthogonal to the longitudinal axis is such that at least two of the projected hole axes are at an angle α with respect to one another, where $0 < \alpha < 90^\circ$, and *where the distance $x \leq 25d$, where d is either the diameter of the largest of the at least three transverse holes or d is the mean diameter of the at least three holes.*

As stated previously, the Examiner has tacitly admitted that none of the cited references shows or suggests a distance x between the tip and a furthest hole axis $\leq 25d$ “*where d is either the diameter of the largest of the at least three transverse holes or d is the mean diameter of the at least three holes,*” as recited in claim 34. Specifically, to show this claim element, the

Examiner has relied solely on measurements of Fig. 6 of Burkinshaw which he concedes does not state that its drawings are to scale and which is silent as to dimensions. The MPEP specifically states that “arguments based on measurements of the drawing features are of little value.” (MPEP § 2125). “[I]t is well established that patent drawings do not define the precise proportions of the elements and may not be relied on to show particular sizes if the specification is completely silent on the issue.” Hockerson-Halberstadt, Inc. v. Avia Group, Int’l, 222 F.3d 951, 956 (Fed. Cir. 2000) (quoted in MPEP § 2125).

Further, the Examiner also concedes that Burkinshaw does not specifically teach the holes being within 25 hole-diameters from the tip ($x \leq 25d$), nor does Burkinshaw show or suggest a range for the hole diameter or any relation between hole diameter and a distance from the tip of the nail. The Examiner goes on to state that “[i]t would have been obvious to use a known screw, having 4.5 mm as the outer diameter, in the invention of Burkinshaw et al., since one would have chosen from among suitable diameters for screws in the art as such as the one suggested by Hover et al.” Initially it is noted that this speculation leads to the claimed positioning of the holes only when coupled with a further unsupported speculation – i.e., the initial speculation that the drawings are drawn to scale to show the positions of the holes relative to the distal tip. Furthermore, it is respectfully submitted that these speculations necessitates the further speculation that any change in screw diameter would not have resulted in further changes to the placement of the screw holes the positions of which are already so imperfectly established in the Examiner’s rejection.

In support of this rejection, the Examiner refers to the dimensions Burkinshaw discloses, which include the lengths and diameters of the filament bundles and the overall length of the rod assembly. (See Burkinshaw, col. 4 ln. 65 - col. 5 ln. 3). It is noted that the embodiments disclosed in Burkinshaw “provide an *intramedullary nail constructed from an assembly of multiple rods, wires or filaments attached at both ends by end caps*.” (*Id.*, col. 4 ln. 53-56). The overall length which the Examiner refers to is the “*overall length of the rod assembly*” which Burkinshaw

explains can be from 18 cm - 55 cm. From the language in Burkinshaw, it is evident that the rod assembly comprises only part of the intramedullary nail. Burkinshaw only discloses a range of overall lengths for the rod assembly which comprises the cage portion of the intramedullary nail. The overall length of the entire intramedullary nail is the sum of the lengths of the two end caps and the length of the rod assembly. It seems the Examiner has assumed that the overall length of the rod assembly is equivalent to the overall length of the entire intramedullary nail. In that case, such an assumption would be an improper interpretation of the specification as disclosed by Burkinshaw, because it is clear from the specification of Burkinshaw that the rod assembly comprises only a portion of the entire intramedullary nail.

Furthermore, it is submitted that Burkinshaw includes no showing or suggestion of “at least three transverse holes extending through the distal end of the nail body,” as recited in claim 1. Nor does Burkinshaw show or suggest that “a projection of the three hole axes of the at least three transverse holes in a plane orthogonal to the longitudinal axis is such that at least two of the projected hole axes are at an angle α with respect to one another, where $0 < \alpha < 90^\circ$,” as recited in claim 1.

For these reasons it is respectfully submitted that the Examiner’s rejection constitutes an improper hindsight reconstruction of the invention and that none of the cited references either shows or suggests “*at least three transverse holes in a plane orthogonal to the longitudinal axis ...are at [a]...distance $x \leq 25d$, where d is either the diameter of the largest of the at least three transverse holes or d is the mean diameter of the at least three holes,*” as recited in claim 34 and that this claim is allowable over Burkinshaw, Brumback and Hover taken either alone or in combination. Because claims 35 - 44 depend on and therefore include the limitations of claim 34, it is respectfully submitted that these claims are also allowable.

Claim 45 recites claims substantially similar to claim 34 including “*the distance $x < 2(n)(d)$, where n is the number of transverse holes grouped within the distance x from the tip of*

the nail body and d is either the diameter of the largest of the at least three transverse holes or d is the mean diameter of the at least three holes.” Therefore, it is respectfully submitted that claim 45 and its dependent claims 46-55 are also allowable over Burkinshaw, Brumback, and Hover for at least the same reasons previously mentioned with regard to claim 34.

Claim 56 also recites claims substantially similar to claim 34 including “a distance a between the tip and the transverse hole closest to the tip is $a \leq 5d$.” Thus, it is respectfully submitted that claim 56 and its dependent claims 57 - 60 are also allowable over Burkinshaw, Brumback, and Hover for at least the same reasons previously mentioned with regard to claim 34.

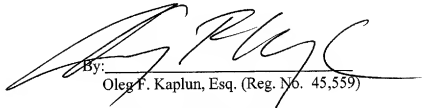
Claim 53 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Burkinshaw in view of Brumback and Hover and in further view of Tepic (U.S. Patent No. 5,458,654) (hereinafter “Tepic”).

Applicant respectfully submits that Tepic fails to cure the above mentioned deficiencies of Burkinshaw and that Burkinshaw, Brumback, Hover, and Tepic, taken alone or in any combination, fail to teach “*the distance $x < 2(n)(d)$, where n is the number of transverse holes grouped within the distance x from the tip of the nail body and d is either the diameter of the largest of the at least three transverse holes or d is the mean diameter of the at least three holes*” as recited in claim 45. Therefore, it is respectfully submitted that claim 45 and its dependent claims 46 - 55 are allowable over Burkinshaw, Brumback, Hover, and Tepic.

In light of the foregoing, Applicant respectfully submits that all of the pending claims are in condition for allowance. All issues raised by the Examiner having been addressed, an early and favorable action on the merits is earnestly solicited.

Respectfully submitted,

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